



独立行政法人理化学研究所 仁科加速器研究センター

第93回RIBF核物理セミナー

RIKEN Nishina Center for Accelerator Based Science

The 93rd RIBF Nuclear Physics Seminar

## Microscopic approach to large-amplitude collective dynamics in Se isotopes

Dr. Nobuo Hinohara ( Theoretical Nuclear Physics Lab, Nishina Center )

Low-lying states in Se isotopes show various large-amplitude collective dynamics from oblate-prolate shape coexistence seen in the proton-rich region to anharmonic vibrations in the stable region. To describe large-amplitude dynamics, we have to go beyond mean-field theory. The description by the Bohr-Mottelson quadruple collective Hamiltonian is one of the possible approaches to such large-amplitude phenomena.

We propose a microscopic theory to determine inertial functions (vibrational collective mass and rotational moments of inertia) in the Bohr-Mottelson collective Hamiltonian on the basis of the adiabatic self-consistent collective coordinate (ASCC) method for two-dimensional collective submanifold. The excitation energies of low-lying collective states and quadruple transitions in  $^{68-78}\text{Se}$  are calculated and compared with the experimental data. Shape mixing properties of the states are also discussed.

**Feb. 9(Tue), 2010 13:30-**  
**Nishina Hall, RIKEN**

*The seminar will be given in English.*

*Contact: RIBF Nuclear Physics Seminar Organizer*

*[seminar@ribf.riken.jp](mailto:seminar@ribf.riken.jp)*

*<http://ribf.riken.jp/~seminar>*